Floor Discussion

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Piero Demetrio Falorsi of the National Statistical Institute of Italy presented the first paper. The work was an evaluation of the performance of estimators in a two-stage sampling design similar to the one used for collecting household survey data by the National Statistical Institute. The presenter compared results of several estimators, including expansion, ratio, synthetic, and composite estimators. He stated that the expansion estimator is the least efficient and shouldn't be used, while the synthetic and composite estimators are the most efficient but more biased than the ratio estimator.

The second paper was presented by Partha Lahiri of the University of Nebraska. This research involved a survey to estimate the prevalence of drug and alcohol usage for counties of a state. The state level estimation had an adequate sample size, but to produce estimates at the county level the sample was too small and would require a larger budget which was not available. In dealing with a small sample while looking for a rare characteristic, it is possible that lack of positive results might mask the true picture in a small area. Therefore, there was a desire to improve estimation techniques. The presentation demonstrated the research using several estimators, including direct, synthetic, and composite estimators.

Omer Gebizlioglu of the State Statistical Institute of Turkey made the final presentation. The work involved techniques for small area estimation in three different surveys undertaken in Turkey in recent years. An agricultural estimation of crop acreage was done by examining remote sensing materials supplemented by ground surveys. The household consumption and expenditure surveys identified numerous auxiliary variables, with some such as income, size of town, and regional income proving to be the most important. The labor force surveys used a multi-stage stratified design and benefited from additional auxiliary sources of information, such as the 1990 Census. Cross checking with one or more sources of information was important in all three examples.

At the conclusion of the presentations, a floor participant questioned Partha Lahiri (the second presenter) regarding the assumption in the synthetic estimator, that the drug prevalence is the same throughout the state for a given demographic group. Is that a reasonable assumption? The response was that this is not necessarily a good assumption and therefore the synthetic estimator is not the best estimator to utilize.